

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Mayumi TOMIKAWA et al.

Application No.: Divisional of 08/014,867

Group Art Unit: 2163

Filed: July 23, 2001

Examiner: Stamber, E.

For: METHOD AND APPARATUS FOR EXTRACTING AND EVALUATING MUTUALLY  
SIMILAR PORTIONS IN ONE-DIMENSIONAL SEQUENCES IN MOLECULES AND/OR  
THREE-DIMENSIONAL STRUCTURE OF MOLECULES

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In accordance with the duty of disclosure provisions of 37 CFR §1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the subject application.

1. Enclosures accompanying this Information Disclosure Statement are:

- 1a. ☒ Form PTO-1449.
- 1b. ☐ Copies of IDS citations.
- 1c. ☐ An English language copy of search report(s) from a counterpart foreign application or a PCT International Search Report.
- 1d. ☐ English language translation (complete or relevant portion(s)) attached to each non-English language publication.
- 1e. ☐ Explanations of Relevancy of References (ATTACHMENT 1(e), hereto) for providing a concise explanation of each non-English publication.
- 1f. ☒ List of Copending Applications (ATTACHMENT 1(f), hereto).
- 1g. ☐ List of Additional Submitted Documents (ATTACHMENT 1(g), hereto).

2. ☒ This Information Disclosure Statement is filed under 37 CFR §1.97(b):

(Check either Item 2a or 2b or 2c or 2d)

- 2a. ☒ Within three months of the filing date of a national application other than a Continued Prosecution Application under §1.53(d);
- 2b. ☐ Within three months of the date of entry of the national stage as set forth in §1.491 in an international application.
- 2c. ☐ Before the mailing of a first Office Action on the merits; or
- 2d. ☐ Before the mailing of a first Office Action after the filing of a Request for Continued Examination under §1.114.



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3. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(c) after the period specified in paragraph 2 above but before the mailing date of a Final Office Action under §1.113, a Notice of Allowance under §1.311 or an action that otherwise closes prosecution in the application, AND

(Check either Item 3a or 3b; Item 3b to be checked if any reference known for more than 3 months)

- 3a. ☐ The §1.97(e) Statement in Item 5 below is applicable; OR  
 3b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) is:  
☐ enclosed.  
☐ to be charged to Deposit Account No. 19-3935.

4. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(d) after period specified in paragraph 3 above, but on or before payment of the Issue Fee, AND

- 4a. ☐ The § 1.97(e) Statement in Item 5 below is applicable; AND  
 4b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) is:  
☐ enclosed.  
☐ to be charged to Deposit Account No. 19-3935.

5. ☐ Statement under § 1.97(e) (applicable if Item 3a or Item 4 is checked)

(Check either Item 5a or 5b)

- 5a. ☐ In accordance with 37 CFR §1.97(e)(1), it is stated that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.  
 5b. ☐ In accordance with 37 CFR §1.97(e)(2), it is stated that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known by any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

6. ☒ This is a continuation/divisional/continuation-in-part application under 37 CFR §1.53(b).

(Check appropriate Items 6a and/or 6b)

- 6a. ☒ Copies of the publications listed on the attached Form PTO-1449 which were previously cited in prior application Serial No. 08/014,867, filed on February 8, 1993, and which is relied on for an earlier effective filing date for the subject application under 35 U.S.C. §120, have been omitted pursuant to 37 CFR §1.98(d).  
 6b. ☐ Copies of the publications listed on the attached Form PTO-1449 which were not previously cited in prior application Serial No. \_\_, filed on \_\_, and which is relied on for an earlier effective filing date for the subject application under 35 U.S.C. §120, are provided herewith.

7. ☒ This is a continuation/divisional application under 37 CFR §1.53(d) or Request for Continued Examination under 37 CFR 1.114.

(Check either Item 7a or 7b)

- 7a. ☒ The Issue Fee has not been paid.  
7b. ☐ A Petition to Withdraw from issue under 37 CFR §1.313(c) is filed concurrently herewith or has been granted. A continuation application under 37 CFR §1.53(d) or Request for Continued Examination under 37 CFR 1.114, after payment of the Issue Fee is proper in accordance with 37 CFR §1.53(d)(1)(ii) or 37 CFR 1.114(a), respectively.

8. ☐ This is a Supplemental Information Disclosure Statement.

(Check either Item 8a or 8b)

- 8a. ☐ This Supplemental Information Disclosure Statement under 37 CFR §1.97(f) supplements the Information Disclosure Statement filed on \_\_\_\_\_. A bona fide attempt was made to comply with 37 CFR §1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental IDS can be considered as if properly filed on \_\_\_\_\_.  
8b. ☐ This Supplemental Information Disclosure Statement is timely filed within one (1) month of the Notice under 37 CFR §1.97 and 1.98, mailed \_\_\_\_\_. (MPEP 609 C(1), Form ¶ 6.49, Rev. 1, Feb. 2000, pp. 600-107)

9. ☐ In accordance with 37 CFR §1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:

(Check appropriate Items 9a, 9b, 9c and/or 9d)

- 9a. ☐ satisfied because all non-English language publications were cited on the enclosed English language copy of the PCT International Search Report or the search report from a counterpart foreign application indicating the degree of relevance found by the foreign office. (See U.S. Patent & Trademark Office's authorization in the Federal Register, Vol. 57, No. 12, January 17, 1992, at page 2031 (Reply to Comment 68).)  
9b. ☐ set forth in the application.  
9c. ☐ satisfied because an English language translation (complete or relevant portion(s)) is attached to each non-English language publication.  
9d. ☐ enclosed as Attachment 1(e), hereto.


10.No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than search report(s) from a counterpart foreign application or a PCT International Search Report, if submitted herewith). 37 CFR §§ 1.97(g) and (h).

11.The Commissioner is authorized to credit any overpayment or charge any additional fee required under 37 CFR §1.17 for this Information Disclosure Statement and/or Petition to Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Dated: July 23, 2001  
700 Eleventh Street, N.W., Suite 500  
Washington, D.C. 20001  
Telephone: (202) 434-1500  
Facsimile: (202) 434-1501

By:   
Gene M. Garner II  
Registration No. 34,172

|   |                             |  |  |
|---|-----------------------------|--|--|
| FORM PTO-1449<br>PATENT AND TRADEMARK OFFICE  | U.S. DEPARTMENT OF COMMERCE | ATTORNEY DOCKET NO.<br>522.1921D3              | APPLICATION NO.<br>Divisional of<br>08/014,867 |
| <b>LIST OF REFERENCES CITED BY APPLICANT</b><br><br>(Use several sheets if necessary) |                             | FIRST NAMED INVENTOR<br>Mayumi TOMIKAWA et al. |  |
|   |                             | FILING DATE<br>July 23, 2001                   | GROUP ART UN<br>2163                           |

15903 U.S. Pat. & Tm. Office  
09/20/01  
07/23/01

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NO. | DATE  | NAME              | CLASS | SUB-<br>CLASS | FILING<br>DATE |
|---------------------|----|-----------------|-------|-------------------|-------|---------------|----------------|
|                     | AA | 4,823,306       | 4/89  | Barbic et al.     |       |               |                |
|                     | AB | 4,853,871       | 8/89  | Pantoliano et al. |       |               |                |
|                     | AC | 4,939,666       | 7/90  | Hardman           |       |               |                |
|                     | AD | 5,157,736       | 10/92 | Boyer et al.      |       |               |                |
|                     | AE | 5,200,910       | 4/93  | Subbiah           |       |               |                |
|                     | AF | 5,241,470       | 8/93  | Lee et al.        |       |               |                |
|                     | AG | 5,263,159       | 11/93 | Mitsui            |       |               |                |
|                     | AH | 5,331,573       | 7/94  | Balaji et al.     |       |               |                |
|                     | AI | 5,410,493       | 4/95  | Konagaya          |       |               |                |
|                     | AJ | 5,446,798       | 8/95  | Morita et al.     |       |               |                |

## FOREIGN PATENT DOCUMENTS

|  |    | DOCUMENT<br>NO. | DATE | COUNTRY | CLASS | SUB-<br>CLASS | TRANSLATION<br>YES NO |
|--|----|-----------------|------|---------|-------|---------------|-----------------------|
|  | AK |                 |      |         |       |               |                       |
|  | AL |                 |      |         |       |               |                       |
|  | AM |                 |      |         |       |               |                       |
|  | AN |                 |      |         |       |               |                       |
|  | AO |                 |      |         |       |               |                       |
|  | AP |                 |      |         |       |               |                       |

## OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

|  |    |  |
|--|----|--|
|  | AQ | "The Student Edition of MATLAB", 1992 by The MathWorks, Inc., Prentice-Hall Publishing   |
|  | AR | Vriend and Sander, A Detection of Common Three-Dimensional Substructures in Proteins@PROTEINS: Structure, Function, and Genetics, No. 1, 1991, pages 52-58   |
|  | AS | Alexandrov, Takahashi, and Go, A Common Spatial Arrangements of Backbone Fragments in Homologous and Non-homologous Proteins@ Journal of Molecular Biology, (1992) 225, pages 5-9  |
|  | AT | Shoichi Sato and Toru Yao, A Homology Analysis of Protein Conformational Data,@ The Tenth Chemistry Information Discussion Meeting, November 6 - November 8, 1987, The Fifteenth Structure-Activity Relationship Program, November 6 - November 8, 1987, pp. 88-92 (English Translation numbered as pp. 1-6)                                 |
|  | AU | Toru Kitanaka and Hideaki Umeyama, A Development of a Protein Modeling Method by Using Known Conformations@, The Tenth Chemistry Information Discussion Meeting, November 6 - November 8, 1987, The Fifteenth Structure-Activity Relationship Program, November 6 - November 8, 1987, pp. 354-357 (English Translation numbered as pp. 7-15) |
|  | AV | Nobuo Tomioka and Akiko Itai, AA Variety of Computer Images Molecular Designing and Molecular Modeling@, pp. 64, 65, et. seq. (English Translation numbered as pp.16-23)   |
|  | AW | Orengo, Brown, and Taylor, A Fast Structure Alignment for Protein Databank Searching@ PROTEINS: Structure, Function, and Genetics 14:139-167 (1992)  |

|  |                 |
|--|-----------------|
| EXAMINER   | DATE CONSIDERED |
| EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |                 |

|                                |                        |                                      |
|--------------------------------|------------------------|--------------------------------------|
| LIST OF COPENDING APPLICATIONS | ATTORNEY DOCKET NO.    | APPLICATION NO.                      |
|                                | 522.1921D3             | Divisional Application of 08/014,867 |
|                                | FIRST NAMED INVENTOR   |                                      |
|                                | Mayumi TOMIKAWA et al. |                                      |
|                                | FILING DATE            | GROUP ART UNIT                       |
|                                | July 23, 2001          | 2163                                 |

S&H Form (2/01)  
 1c903 U.S. PTO  
 09/909809  
 07/23/01

**ATTACHMENT 1(f)**

The following, prior-filed, copending U.S. patent application(s) is/are listed in accordance with the duty of disclosure provisions of 37 CFR § 1.56, so that the Examiner may consider same should he deem any thereof to be material to examination of the subject application. A copy of the identified copending application(s) is provided pursuant to 37 CFR 1.98(a)(2)(iii), unless domestic priority thereto has been claimed under 35 USC §120, 37 CFR §1.98(d).

It is requested that the Examiner acknowledge his consideration of application(s) below-listed by initialling same in the space provided adjacent each such application and that the Examiner sign and date this form at the bottom thereof to confirm such consideration having been given.

**This submission in no way represents an admission that any of the information listed herein constitutes prior art with respect to the subject application and unless and until such prior art status is established, this submission is not a request that the information presented herein be printed on the face of any patent issuing from the subject application in which this information**

| EXAMINER INITIAL |   | U.S. SERIAL NO. | FILING DATE      | NAME                   | ASSIGNEE        | Domestic Priority Claimed? |
|------------------|---|-----------------|------------------|------------------------|-----------------|----------------------------|
|                  | 1 | 08/014,867      | February 8, 1993 | Mayumi TOMIKAWA et al. | FUJITSU LIMITED |                            |
|                  | 2 |                 |                  |                        |                 |                            |
|                  | 3 |                 |                  |                        |                 |                            |
|                  | 4 |                 |                  |                        |                 |                            |
|                  | 5 |                 |                  |                        |                 |                            |
|                  | 6 |                 |                  |                        |                 |                            |
|                  | 7 |                 |                  |                        |                 |                            |
|                  | 8 |                 |                  |                        |                 |                            |

is being filed.

**U.S. PATENT APPLICATION DOCUMENTS**

|  |                 |
|--|-----------------|
| EXAMINER   | DATE CONSIDERED |
| EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |                 |